APPENDIX D

CAPACITY ASSURANCE PROGRAM

CAPACITY ASSURANCE PLAN ADDENDUM

June 2007

Original Capacity Assurance Plan Specifications (August 1990)

Available capacity = Capacity of pipe flowing full (Manning's) – Peak Dry Weather Flow – Committed Flows

MWS could allocate up to 50% of existing capacity based on the Criteria for Assignment of Points described below:

- (10 Points)

Developed Density	**Percent**
Lightly Developed	100
Moderately Developed	80
Densely Developed	50

- (10 Points)

Frequency of Overflows	**Percent**
<10 per year	100
>10 per year	80
>15 per year	60
>20 per year	30
>25 per year	0

- (12 Points)

Magnitude of Overflows	**Percent**
<1 million gallons (MG)	100
>1MG	80
>10MG	60
>20MG	30
>25MG	0

- (18 Points)

Discharge of Receiving Stream	**Percent**
0 cfs	20
<5 cfs	50
<10 cfs	60
<50 cfs	80
>50 cfs	100

Downstream pumping stations are also required to be capable of handling peak and committed flows with the largest pump out of service (e.g. rated capacity).

Limitations of the Original Plan

- Previous model was "static" instead of "dynamic". As a result, the model assumes that individual peak flows occur simultaneously and overestimates the total peak flow.
- Base flows have changed since 1990 in the negative direction in basins where I/I remediation has been performed.
- Design criteria flows are different than actually realized.

Status of the Existing Plan In 1994

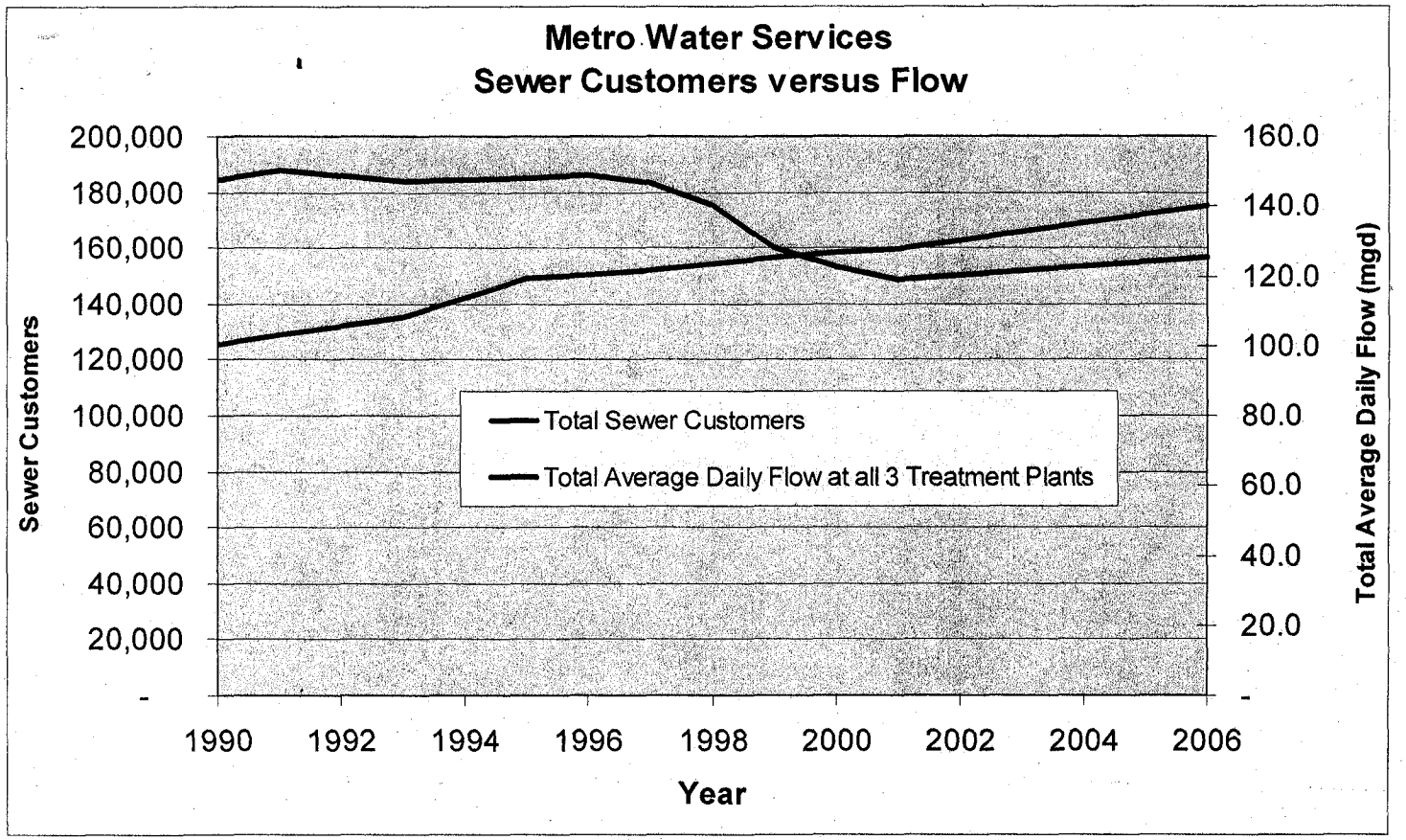
Static model was frequently recalibrated using permanent and temporary flow monitors. Analysis was performed by applying:

70% of capacity = critical point

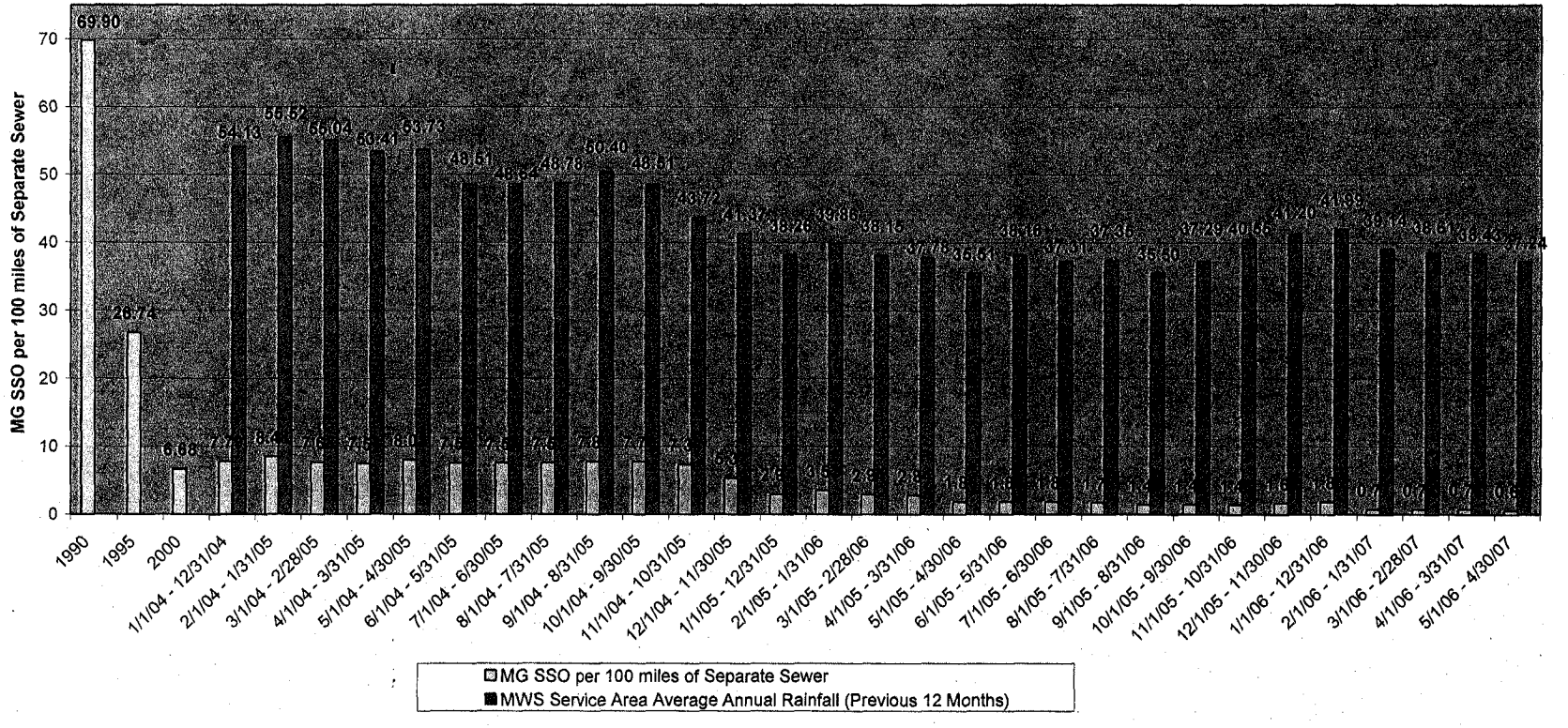
70% triggers capital improvement project to improve capacity

At critical point a maximum of 50% of the remaining capacity could be allocated so long as progress was being made on identified capacity recovery project and rehabilitation / equalization project for downstream sanitary sewer overflows (SSOs).

Successes of the 1990 Capacity Assurance Plan and Overflow Abatement Program

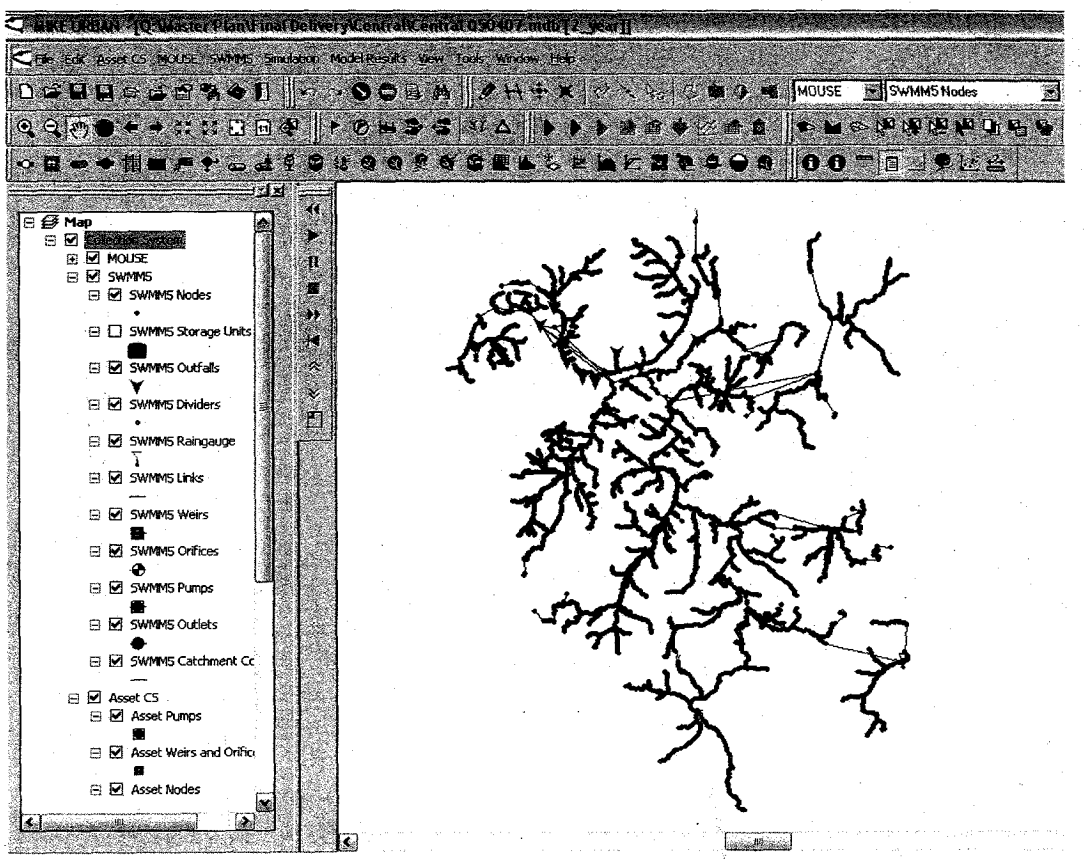


MG SSO per 100 miles of Separate Sewer



Proposed Modifications to Original Capacity Assurance Plan

- The new plan's modeling standard will be a dynamic sewer hydraulic model that has recently been developed for MWS and is based on the EPA SWMM5 engine.



- MWS could allocate up to 85% of existing capacity based on the Updated Criteria for Determining Available Capacity described on the following page.

UPDATED CRITERIA FOR DETERMINING AVAILABLE CAPACITY

Volume of Closest Downstream Overflow (15 points)

>10 MG in the past 12 months	0 points
5-10 MG in the past 12 months	5 points
1-5 MG in the past 12 months	10 points
0-1 MG in the past 12 months	15 points

Frequency of Closest Downstream Overflow (15 points)

>12 in the past 12 months	0 points
8-12 in the past 12 months	5 points
4-8 in the past 12 months	10 points
0-4 in the past 12 months	15 points

Discharge of Receiving Stream/ Public Exposure (15 points)

0 cfs	0 points
<5 cfs	2 points
<10 cfs	5 points
<50 cfs	8 points
>50 cfs	10 points
Discharge to recreational water body or area with high likelihood of public exposure.	0 points
Discharge to non-recreational water body or area with low likelihood of public exposure.	5 points

Past 5 years and Future Projects Defined to Correct/ Abate SSO (25 points)

Remedial projects completed in basin* within the past 5 years.	25 points
Remedial projects in the basin* are under construction or have been funded for construction.	20 points
Remedial projects in the basin* are being designed.	10 points
Remedial projects in the basin* are in the CAP/ER but design has not begun.	5 points
Remedial projects in the basin* have not been planned.	0 points

* The "basin" is defined as all upstream areas that are contributing the closest SSO.

MWS Meeting Consent Decree Milestones including CAP/ER (15 points)

No 0 points
Yes 15 points